USQ Not Required – ETF is a <Hazard Category 3 Radiological Facility

CHANGE HISTORY (≤ LAST 5 REV-MODS )

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-4</td>
<td>08/06/2018</td>
<td>Radcon Requirement</td>
<td>Added Radiation and Contamination Control, Added new Figure(s), Added Attachment.</td>
</tr>
<tr>
<td>A-3</td>
<td>07/25/2017</td>
<td>Maintenance request</td>
<td>Add Water Trap device information to Section 4.1. Add New Section 4.2 Performance Documents. Add multiple steps to Section 5.1. Update Records Section to comply with writer’s standard. Add Attachment 1. Add Figure 1.</td>
</tr>
<tr>
<td>A-2</td>
<td>07/13/2017</td>
<td>Periodic Review</td>
<td>Updated Records statement and removed vague phrases</td>
</tr>
<tr>
<td>A-1</td>
<td>07/21/2016</td>
<td>Correct Use Type</td>
<td>Change from continuous use to reference use per document owner’s direction.</td>
</tr>
<tr>
<td>A-0</td>
<td>09/15/2015</td>
<td>Converting to WRPS Format</td>
<td>New Procedure</td>
</tr>
</tbody>
</table>

Table of Contents

1.0 PURPOSE AND SCOPE .................................................................................. 3

1.1 Purpose ........................................................................................................ 3

1.2 Scope ............................................................................................................ 3

2.0 INFORMATION .............................................................................................. 3

3.0 PRECAUTIONS AND LIMITATIONS ................................................................. 3

3.1 Radiation and Contamination Control .......................................................... 3

3.2 Environmental Compliance ......................................................................... 3

4.0 PREREQUISITES ........................................................................................... 4

4.1 Special Tools, Equipment, and Supplies ...................................................... 4

4.2 Performance Documents ............................................................................. 4

4.3 Field Preparation ........................................................................................ 4

5.0 PROCEDURE ................................................................................................ 5

5.1 Initial Setup and Calibration Check .............................................................. 5

5.2 Calibration .................................................................................................... 6

5.3 Restoration ................................................................................................... 7

5.4 Acceptance Criteria .................................................................................... 7

5.5 Review .......................................................................................................... 7

5.6 Records ....................................................................................................... 7

Attachment 1 - Water Trap/Pressure M&TE .......................................................... 8
Attachment 2 – Calibration Instructions

Figure 1 - How the Trap Works

Figure 2 – Negative Pressure Connection

Figure 3 – Positive Pressure Connection
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe, uniform method for calibration of Foxboro® pressure transmitter, model 841.

1.2 Scope

Procedure instructions provide for calibrating the Foxboro pressure transmitter, model 841.

2.0 INFORMATION

None.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Radiation and Contamination Control

3.1.1 Work in radiological areas will be performed using a radiological work permit following review by Radiological Control per ALARA Work Planning procedure, TFC-ESHQ-RP_RWP-C-03.

3.1.2 The opening of any system or component within a Radiological Area requires presence of a Health Physics Technician to verify contamination control.

3.1.3 When disconnecting, breaching, or opening systems or system components that are currently or previously connected to waste tanks or waste transfer systems:
   - Follow the RWP for radiological control requirements
   - Pre-job and post-job surveys are required
   - Follow Calibration Instructions (Attachment 2)

3.2 Environmental Compliance

3.2.1 In the event of a spill/leak/release, notify the SOM/FWS and respond per ETF-ERP-85B-003, Emergency Spill or Release at ETF.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

NOTE - M&TE used to collect acceptance criteria data during performance of this procedure shall meet the following requirements:

- Be within its current calibration cycle as evidenced by an affixed calibration label
- Be capable of desired range
- Accuracy is equal to or greater than M&TE tolerance specified on PM data sheet or is at least four times greater than specified device tolerance.

The following supplies may be needed to perform this procedure:

- Pressure source
- Current measuring device (CMD)
- Pressure gauge, capable of appropriate input range
- Power supply, 24 to 36 Vdc, as needed
- Blind flange adapter for four transmitters with remote seal connections
- Scaffolding or ladder required to access PT-60B-102 and PT-60B-202.
- Water trap device Figure 1.

4.2 Performance Documents

The following documents may be required during the performance of this procedure.

- Radiological survey plan
- Waste planning checklist
- Pressure M&TE vendor manual.

4.3 Field Preparation

4.3.1 ENSURE scaffolding or ladder to access transmitters (PT-60B-102, 202) are in place before starting procedure.
5.0 PROCEDURE

5.1 Initial Setup and Calibration Check

5.1.1 IF performing this procedure on a system that has the potential for free liquids or moisture to enter the Pressure M&TE, USE a water trap device.

5.1.1.1 ENSURE the Water Trap is installed in a vertical position to operate correctly Figure 1.

5.1.1.2 IF liquids or moisture gets into the Water Trap or Pressure M&TE REFER to Attachment 1.

5.1.1.3 IF performing this procedure on a system that is potentially contaminated, FOLLOW Calibration Instructions (Attachment 2)

5.1.2 ENSURE transmitter is isolated from system.

5.1.3 REMOVE back housing cover from transmitter.

5.1.4 CONNECT CMD (mAdc) in series with negative lead of output.

5.1.5 DISCONNECT pressure input.

5.1.6 CONNECT pressure source and pressure gauge.

5.1.7 VARY input pressure per PM/S data sheet AND

RECORD CMD readings in as-found column on data sheet.

5.1.8 IF as-found values are not within specified tolerance per data sheet, GO TO Section 5.2,

OR

IF as-found values are within specified tolerance, but deemed marginal, and optimization is desired, GO TO Section 5.2,

OR

IF as-found values are within specified tolerance, RECORD as-found values in as-left column of PM/S data sheet AND

GO TO Section 5.3, Restoration.
5.2 Calibration

5.2.1 APPLY minimum input pressure per PM/S data sheet AND ADJUST Zero.

5.2.2 APPLY maximum input pressure per PM/S data sheet AND ADJUST Span.

5.2.3 REPEAT Steps 5.2.1 and 5.2.2 until both values are within tolerance.

5.2.4 VARY input pressure per PM/S data sheet AND RECORD as-left values on data sheet.
5.3 Restoration

5.3.1 RESTORE to as-found conditions.

5.3.2 INFORM SOM test is complete and instrument/equipment/system may be returned to service.

5.3.3 ENSURE alarms are reset or cleared.

5.4 Acceptance Criteria

Acceptance criteria has been met when steps in this procedure have been satisfactorily performed and results are recorded on the data sheet(s).

5.5 Review

5.5.1 INFORM FWS test is complete.

5.5.2 (FWS) REVIEW AND ENSURE the following:

- Completed data sheets meet the acceptance criteria
- Comments sections are filled out appropriately
- Work requests needed as a result of this procedure are identified and generated
- Work request number(s) of any work documents generated as a result of this procedure, are recorded in the Comments/Remarks section of the data sheet.

5.6 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
Attachment 1 - Water Trap/Pressure M&TE

**Water Trap with Potentially Contaminated Liquid**

1. If potentially contaminated liquid gets into Water Trap, Suspend the work.
2. Notify the FWS.
3. When provided approval from the FWS proceed as follows.
4. Return to a RMA.
5. Disassemble the Water Trap.
6. Allow trap to dry overnight.
7. Survey disassembled trap components in accordance with Radcon survey plan.
8. If the Water Trap can be released return it to tool crib.
9. If the Water Trap cannot be released, dispose of it per waste planning checklist.

**Water Trap with Clean Liquid (NOT Contaminated)**

1. If clean liquid gets into Water Trap, disassemble the Water Trap.
2. Allow Water Trap to dry overnight.
3. Re-assemble the Water Trap.
4. Return the Water Trap to the tool crib.
Attachment 1 - Water Trap/Pressure M&TE (Cont.)

**M&TE with Potentially Contaminated Liquid**

1. If potentially contaminated liquid gets past water trap and inside Pressure M&TE, Suspend the work.

2. Notify FWS.

3. Wait for further directions.

**M&TE with Clean Liquid (NOT Contaminated)**

1. If clean liquid gets past the water trap disassemble and dry out Pressure M&TE per manufactures direction.

2. Return the M&TE to the tool crib.

3. Request the M&TE to be returned to NIST calibration lab for recalibration.
Attachment 2 – Calibration Instructions

**Positive pressure calibrations:**

Note: Vent Valve assembly is required on all positive pressure calibrations to ensure M&TE is not contaminated by venting potential process air back through M&TE.
Install vent valve assembly Per Figure 3
Ensure IV is open and VV is closed
Proceed with calibration per work package
  - Whenever venting is required during calibration steps, vent stored pressure as follows.

NOTE – Valve IV can remain open when reading is required via M&TE.

Ensure IV valve is closed
Ensure VV valve is opened
Repeat sequence as necessary to complete the calibration.
After all steps are completed for the calibration, perform RCT survey release plan XXX

**Negative pressure calibrations:**

Note: use of surrogate filter is required for negative pressure calibrations to ensure M&TE is not contaminated by pulling process air into M&TE while drawing Vacuum.
Negative calibrations should be performed as follows.
Ensure surrogate filter holder has media installed.
Connect filter in-line per Figure 2
Ensure IV is open.
Pull a representative vacuum into M&TE through filter
Ensure IV is closed.
Vent through VV
RCT to perform survey of the media.
IF no contamination found remove surrogate filter holder and proceed with calibration.
Figure 1 - How the Trap Works

1. Gas/Air enters through the top slot which goes into the chamber.
2. Dirt and Moisture particles are collected in the chamber, which is visible through the clear transparent glass window.
3. Then Gas/Dry Air goes into the centre slot where it enters the instrument.
Figure 2 – Negative Pressure Connection
Figure 3 – Positive Pressure Connection